

Notice of Allowability

Application No.

10/765,515

Applicant(s)

SMITH ET AL.

Examiner

Sean P. Shechtman

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 17 June 2005.
2. ☒ The allowed claim(s) is/are 1-4,6-8,11-15,17 and 20-26.
3. ☒ The drawings filed on 22 October 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

1. Claims 1-4, 6-8, 11-15, 17, and 20-26 are presented for examination. Claims 1, 13, and 17 have been amended. Claims 5, 9-10, 16, and 18-19 have been cancelled. Claims 20-26 have been added.

Claim Rejections - 35 USC § 103

2. Rejections withdrawn due to the amendment.

Allowable Subject Matter

3. Claims 1-4, 6-8, 11-15, 17, and 20-26 are allowed.

While Lee teaches a multi-dimensional image processing apparatus collecting data with a plurality of detectors that are positioned about a semiconductor wafer, transmitting the data frames from each detector to a data distribution system, and a processing node configured to receive data frames from the data distribution system and analyze the data frames, wherein the data transfer paths allow data frames collected by a detector to be routed to a processing node.

And, Alumot teaches detectors collecting a data frame for each of a plurality of three or more device areas and a pixel aligner to facilitate pixel matching; wherein processing of data frames includes a row based analysis.

Referring to claim 1, neither Lee nor Alumot, taken either alone or in obvious combination disclose a semiconductor wafer inspection method having all the claimed features of applicant's instant invention, specifically including: at least one detector configured to collect data in a different manner from other detectors; aligning the data frames to facilitate pixel matching between the data frames collected so that the data frames collected correspond to the same regions of the wafer where each detector collected a data frame; and processing the aligned

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data frames using at least one of row based analysis, composite-row based analysis, column based analysis, and composite column based analysis.

Referring to claim 11, neither Lee nor Alumot, taken either alone or in obvious combination disclose a semiconductor wafer inspection system having all the claimed features of applicant's instant invention, specifically including: a plurality of detectors each configured to obtain data using more than one manner of data collection; and processing nodes configured to align the data frames detected and conduct parallel processing of the data frames detected using at least one of row based analysis, composite-row based analysis, column based analysis, and composite column based analysis to identify defects.

Also, there is no motivation to combine Alumot with Lee to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571) 272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPS

Sean P. Shechtman

July 18, 2005

Albert W. Paladini 7-19-05
ALBERT W. PALADINI
PRIMARY EXAMINER